Number Sense Exam 095, 2/7/2020

(1) $15^2 =$ _____

(2) $2.25 \div (-1.5) =$ _____ (decimal)

(3) $15 \times 222 =$ _____

(4) $4 + 60 \div 12 \times 5 =$ _____

(5) $0.444\ldots =$ _____ (proper fraction)

(6) $0.1875 =$ _____ (proper fraction)

(7) $3913 + 3193 =$ _____

(8) 5 yards = _____ inches

(9) $321 \times 8 =$ _____

*(10) $115 + 2013 - 511 + 3102 =$ _____

(11) DLV − CDXLIV = _____ (Arabic Numeral)

(12) $23 \times 45 =$ _____

(13) $113 \times 107 =$ _____

(14) $84 + 64 - 44 - 61 + 41 - 21 =$ _____

(15) $214 \times 16 =$ _____

(16) The multiplicative inverse of 3^{-2} is _____

(17) $11 \times 319 =$ _____

(18) $3\frac{4}{5} - 8\frac{9}{10} =$ _____ (mixed number)

(19) $4\frac{5}{12} - 2\frac{2}{3} =$ _____ (mixed number)

*(20) $\sqrt{1230} \times \sqrt{1220} =$ _____

(21) The volume of a cube with side 11 is _____

(22) $122 \times 16 =$ _____

(23) The length of a diagonal of a square is $3\sqrt{5}$ cm. The area of the square is _____ sq. cm.

(24) $41 \times 49 =$ _____

(25) If $23^2 - 21^2 = 11k$, find k. _____

(26) $85 \times 85 =$ _____

(27) $\left(\sqrt{64} - \sqrt{36}\right)^5 =$ _____

(28) 36 is 24% of _____

(29) The 11th triangular number is _____

*(30) $\sqrt{34596} =$ _____

(31) $4\frac{3}{5} - 1\frac{7}{10} =$ _____ (mixed number)

(32) How many improper subsets does the set $\{S, H, A, R, Y\}$ have? _____

(33) If $2x + 7y = 5$ and $3x - 7y = 0$, then $y =$ _____

(34) The product of the prime numbers less than 11 is _____

(35) $\frac{6! - 4!}{5!} =$ _____ (mixed number)

(36) $9 \times 6! - 18 \times 5! =$ _____

(37) Let $P = -2$, $Q = 3$, and $R = 45$. $(Q^P)R =$ _____

(38) $2.8333\ldots =$ _____ (fraction)

(39) $\sqrt{196 \times 256} =$ _____

*(40) $\sqrt{959} + \sqrt{487} =$ _____

(41) The y-intercept of the line $2x - 3y = 4$ is (h, k). Find k. _____

(42) A right triangle has integral sides. If one leg is 13 then the other leg is _____

(43) $12 \times 39 + 13 \times 34 =$ _____

(44) $64\frac{2}{7}\% =$ _____ (proper fraction)

(45) If $3x - 2y = 7$ and $3x - y = 9$, then $y =$ _____

(46) How many pentagons meet at each vertex of a Platonic dodecahedron? _____

(47) A is 25% less than B and B is 25% less than C. A is what % less than C? _____ %

(48) The 5th pentagonal number is _____

(49) $28 \times 38 =$ _____

*(50) $\sqrt[3]{700000} =$ _____

(51) The larger root of $3x^2 - 16x + 5 = 0$ is _____

(52) $888 \times \dfrac{4}{37} =$ _____

(53) The point $(3, 1)$ is reflected across the line $y = x$ to the point (h, k). Find k. _____

(54) The 12the pentagonal number is _____

(55) If $(\sqrt[3]{a^4})(\sqrt[5]{a^k}) = \sqrt[15]{a^{26}}$, then $k =$ _____

(56) The next term of $.0324, .054, .09, .15, \ldots$ is _____

(57) $1 + 2 + 3 + 4 + \ldots + 40 =$ _____

(58) $\cos(-3\pi) - \sin(-3\pi) =$ _____

(59) The smallest integer x such that $7x - 8 \geq 9$ is ___

*(60) $9^4 \div 6^3 \times 2^3 =$ _____

(61) $\sqrt{7.3441} =$ _____ (decimal)

(62) $11^{13} \div 15$ has a remainder of _____

(63) The odds of losing are 4 to 9. The probability of winning is = _____

(64) A box contains black, red, blue, and green pens. How many different sets of 3 pens can be packaged? _____

(65) The harmonic mean of the roots of $2x^3 - 9x^2 + 10x - 3 = 0$ is _____

(66) If $f(x) = \dfrac{3 - 2x}{4}$, then $f^{-1}(-1) =$ _____

(67) $(\cos 225°)(\sin 315°) =$ _____

(68) $\cos[\sec^{-1}(1.3)] =$ _____

(69) $(2 + 3\mathrm{i})(4 - 5\mathrm{i}) = a + b\mathrm{i}$ and $b =$ _____

*(70) $2152008 \div 3579 =$ _____

(71) The minimum value of $f(x) = (x + 2)^2 + 2$ is ___

(72) $\lim_{x \to 4} \left(\dfrac{x^2 + x - 20}{x - 4} \right) =$ _____

(73) If $f(x) = 3x - 4$, then $f^{-1}(5) =$ _____

(74) If $f(x) = \sqrt[3]{2x - 1}$, then $f^{-1}(4) =$ _____

(75) Let $f(x) = 2x^3 + 3x^2 + 2x + 3$.
Find $f''(-2)$. _____

(76) The 4-th pentagonal number is _____

(77) Truncate $(2\sqrt{3} + 3\sqrt{2})$ to the nearest whole. ___

(78) A store has red, blue, green, brown, purple, and yellow crayons. How many different sets of four crayons can the store sell? _____

(79) $\lim\limits_{x \to 1} \dfrac{1}{2x} =$ _____

*(80) $833 \times \dfrac{2}{9} \times 67\% =$ _____